East Los Angeles College
Department of Mathematics
Math 261
Test 4

Integrate the following

1. $\int_0^2 (x + x^2)\, dx$

2. $\int_{-3}^4 (1 + |x|)\, dx$

3. $\int_1^5 \frac{1}{2x^2}\, dx$

4. $\int_0^{\pi/4} \left(1 + sec^2(x)\right) dx$

5. $\int_1^9 \frac{\sqrt{x}+1}{x^2}\, dx$

6. $\int_{-\pi/4}^{\pi/4} \left(1 + 2sec(x)tan(x)\right) dx$

7. $\int_0^4 (x-5)(x+3) dx$

8. $\int_1^8 \left(t - 3t^{3/2} + \frac{1}{t^2}\right) dt$

9. $\int_0^{2\pi} |sin(x)|\, dx$

10. $\int_0^4 |2x - 3|\, dx$

11. $\int_0^{\pi/4} sin(2\pi x) dx$

12. $\int_0^4 \frac{1}{\sqrt{x+5}}$

13. $\int (2x+7)^5 dx$

14. $\int \sqrt[3]{1-x} dx$

15. $\int \frac{cos(\sqrt{x})}{\sqrt{x}} dx$

16. $\int \frac{sin\left(\frac{\pi}{x}\right)}{x^2} dx$

17. $\int \frac{1}{(x-3)^2} dx$

18. $\int \frac{x+2}{\sqrt{x^2+4x}} dx$

19. $\int csc^2(5x)\, dx$

20. $\int \left(1 + tan(\theta)\right)^3 sec^2(\theta) d\theta$

Solve the following differential equations.

21. $f'(x) = \sqrt{x}(6 + 5x)$ where $f(1) = 10$

22. $f''(\theta) = sin(\theta) + cos(\theta)$ where $f(0) = 3$ and $f'(0) = 4$

23. Use the midpoint rule with the given value of n to approximate the following integral.

$\int_0^2 cos(x^3) dx$ where n=6. Approximate your answer to the nearest ten thousandths.

24. What is your test 1 score?

25. What is your test 2 score?

26. What is your test 3 score?

27. What is your total extra credit points?

28. What is your name?